PROJECT DIARY

Project Title: SUDOKU QUEST

Team members:

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❖ DAY 1: Date- 7/10/14 (Tuesday)   10:00 pm to 11:00 pm

- The list of the projects were uploaded on the CS-101 website. We went through the list to decide what project we should choose.
- Two different projects came out at the discussion. They were **MINESWIPPER** and **SUDOKU SOLVER**.
- We decided to read individually about both of the two projects from the internet.
- The day's meeting was ended here and the date of the next meeting was decided to be 8/10/14 i.e. on the next day.

❖ DAY 2: Date- 8/10/14 (Wednesday)   9:30 pm to 10:30 pm

- We discussed about what we read about **MINESWIPPER** and **SUDOKU**.
- Finally we agreed to choose **SUDOKU SOLVER** as our project topic because of its worldwide popularity.
- We decided to read more about Sudoku puzzle and its **different solving techniques** from the internet.
- The day's meeting was ended here and the date of the next meeting was decided to be 10/10/14 i.e. on the next Friday.

❖ DAY 3: Date- 10/10/14 (Friday)   9:30 pm to 11:30 pm

- Discussed about what we have read in the internet about **Sudoku puzzles** and its **different solving techniques**.
- Decided that we will use the **Method of Backtracking** to solve an unsolved Sudoku. It was chosen over the naïve brute force method because, the method of back tracking requires much less no of iterations and so more efficient.

- Came up with an idea of building also a **Sudoku Generator** which will generate unsolved Sudoku for the user to play a game.
- We decided first to work on Sudoku Solver and then move on to Sudoku Generator.

------- *PRIMARY WORK DISTRIBUTION* ----------

A) **Lavesh Kumar Srivastava** :
- Studying about methods of designing **graphics and interfaces in C++**;
- Deciding how to build the graphics content for the Sudoku project.
- Coding the functions named **checkBox** and **checkColumn** (only after the algorithm of solution of the Sudoku is provided);
- Deciding the contents and writing **user manual**.

B) **Dipayan Mukherjee** :
- Thinking the **logic to solve a given unsolved Sudoku,** Making an **algorithm or flowchart**;
- Coding the functions named **getGrid** and **showGrid** (only after the algorithm of solution of the Sudoku is decided);
- Checking the functions made by Sayandeep and Lavesh.
- Maintaining the **group diary**.

C) **Sayandeep Roy** :
- Thinking the **logic to solve a given unsolved Sudoku**, checking **web contents**.
- Coding the functions named **locateAnEmptyPlace** and **checkRow** (only after the algorithm of solution of the Sudoku is decided),
- Checking the functions made by Dipayan and Lavesh.
- Deciding the contents and writing the **SRS report**.

- The day's meeting was ended here and the date of the next meeting was decided to be 12/10/14 i.e. on the next Sunday.

❖ **DAY 4: Date- 12/10/14 (Sunday)**

The meeting is cancelled due to unavoidable circumstances.

❖ DAY 5: Date- 16/10/14   (Thursday, In the lab)   8:30 pm to 10:00 pm

- Checked the **solveSudoku** function for different puzzles and found that it is not working properly.
- Thought about the problem but could not find any.
- Discussed with our T.A. about the project and gave her written summary of our progresses so far.
- The day's meeting was ended here and the date of the next meeting was decided to be 17/10/14 i.e. on the next Friday.
- At midnight we finally found the bug in our **solveSudoku** function and solved it.

❖ DAY 6: Date- 17/10/14   (Friday)   9:30 pm to 10:30 pm

- Different puzzles were tested by on **graphical interface for sudoku solver**.
- Logic of **checkValidity** function was discussed.
- **Algorithm of Sudoku generator** was discussed.
- We decided to have four difficulty levels for the user to choose in order to make game more interesting.
- Decisions taken to make **'Check'** and **'Hint'** options available for the user during gameplay.
- The day's meeting was ended here and the date of the next meeting was decided to be 18/10/14 i.e. on the next Saturday.

❖ DAY 7: Date-18/10/14   (Saturday)   6:00 pm to 8:30 pm

- The next day being the **deadline of our 1st phase submission of project work**, all the diaries were converted into .pdf format.
- **Project Report**, **SRS document** and **user manual** was written and converted into .pdf format.
- The name of the project was finally chosen as **'SUDOKU QUEST'**.

❖ DAY 8: Date-30/10/14 (Thursday)   9:00pm to 10:30pm

- Today in the lab we discussed about the Sudoku generator function and wrote a rough code.
- We also note that because of our end semester exams the project work is going to remain stopped for a long time and we calculated that the remaining project work can be done after end semester.

❖ **DAY 9: Date-20/11/2014 (Thursday)** 9:30pm to 11pm

- We checked that our previously coded generator function is not working properly and we thought of a new logic to make the generator function. Dipayan and Sayandeep took the responsibility to code the function.
- We also decided that as our exams are over, we must spend a lot of time on the project work.

❖ **DAY 10: Date-21/11/2014 (Friday)** 9:00pm to 11pm

- The generator function made by Sayandeep and Dipayan had some problems and it was not running. So, Lavesh also tried to solve the problem and finally the function was made.
- The function again started to show some problems. To be particular, it was taking a lot of time to generate a Sudoku puzzle.
- Then we decided to use data file handling technique to generate Sudoku.
- Sayandeep was given the task to code the 'Hint' and 'Check' functions as soon as possible.
- Dipayan was given the job to make the data file for the Sudoku generator and the relevant code for it.

❖ **DAY 11: Date-22/11/2014 (Saturday)** 9:00pm to 11pm

- 'Check' and 'Hint' functions were given by Sayandeep. Lavesh made some necessary changes in those functions according to the graphics format and merged it with the program.
- The generate Sudoku function and the corresponding data file was given by Dipayan. Lavesh merged that function also with the program.

❖ **DAY 12: Date-23/11/2014 (Sunday)** 9:00pm to 10:00pm

- Today we entered some comment lines in our program. The whole program was running well.
- Lavesh decided that he will make some changes in color in the Sudoku grid to make it more understandable.

❖ **<u>DAY 13: Date-24/11/2014 (Monday)</u>**   **9:00pm to 10:30pm**

- Today being the last day of our project submission, we made the relevant documents like SRS and PROJECT REPORT.
- We checked all the documents.
- We also discussed about how much marks we are going to give ourselves others.